

as described in the patent, was placed in the conduit of a cable railway, and was to be used upon a single car, and, as the specification shows, was to be operated in a very simple manner, by a small wire having a loop at one end. The necessities of the service upon the open track of the Brooklyn Bridge require that the cable should be supported for the length of four cars. Heavy mechanism is, therefore, needed, and a system of levers is used, by which great power is obtained; but the gist of the patented improvement, which consisted in the simultaneous raising of pulleys connected by a rod, exists in the extensive system by which the pulleys are raised and lowered.

It is conceded that a single lifting frame for a cable-carrying pulley had been used, and that the cable had been supported between two pulleys, before the date of the Miller invention. The Fothergill-Cooke English patent, sealed February 13, 1872, described a series of cable supporting and lifting pulleys, and the French patent to Messrs. Duez, dated November 22, 1875, described two lifting pulleys, but such pulleys had not been connected together, so as to be raised and lowered simultaneously. The connecting rod, by which both pulleys could be simultaneously raised, constituted Miller's advance in the art. It was a useful improvement, because the cable, when raised by a single pulley, "fell away in angular sections from either side of the pulley, and could be engaged by the gripper at one point only," whereas the connecting pulleys hold the cable in a level position. The question is whether, two disconnected pulleys having been known, and the obvious disadvantages from such disconnection having become apparent when the cable-railway system came into use, it was a patentable invention to join the two pulleys by a rod, so that they could be raised by a looped wire in the hand of the conductor. If it is of importance to simultaneously raise two disconnected but adjacent objects of comparatively small size, which can be accomplished by a small expenditure of force, it would seem natural to connect them by a rod, and also that the experiment would be within the ordinary scope of the mechanic who is in charge of the work of construction. The simplicity of the device may lead us to disregard the inventive skill which produced it, but it was, in our opinion, an ordinary mechanical experiment appearing in a new place. When it is enlarged to meet the needs of enlarged train service, the looped wire becomes a series of levers, but the improvement, in its original and patented form, was an obvious and natural one.

Inasmuch as the improvement described in claim 6 is not deemed to have been patentable, the decree of the circuit court is reversed, with costs of this court.

LONG et al. v. POPE MANUF'G CO.

(Circuit Court, D. Massachusetts. November 21, 1895.)

PATENTS—INFRINGEMENT—STEAM ROAD VEHICLE.

The Long patent, No. 281,091, for an improved steering head for road vehicle, construed as showing no new function except that of shedding dirt from the bearing surfaces of the friction balls, and held not infringed.

This was a bill in equity by George A. Long and others against the Pope Manufacturing Company for alleged infringement of a patent relating to steam road vehicle.

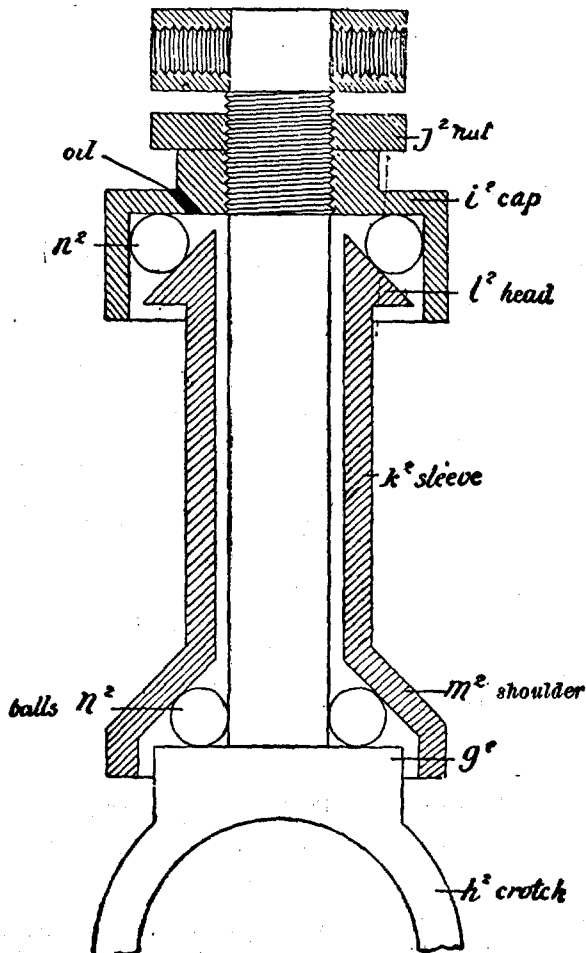
James E. Maynadier, for complainants.

Edmund Wetmore and William A. Redding, for respondent.

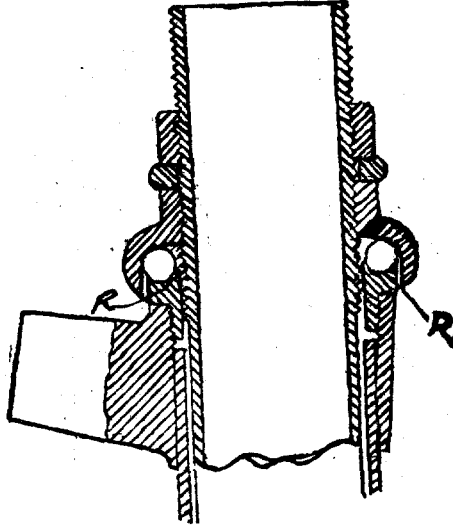
CARPENTER, District Judge. This is a bill to restrain an alleged infringement of the fifth claim of letters patent No. 281,091, issued July 10, 1883, to George A. Long, for steam road vehicle. The claim is as follows:

"5. The improved steering head for road vehicles, consisting of shoulder g^2 , cap i^2 , check-nut j^2 , sleeve k^2 , and balls n^2 , in combination with the stem of the crotch h^2 , substantially as described."

The structure above claimed may be understood from the following copy of Fig. 4 of the drawings annexed to the patent:



It does not appear that there is any prior structure in which the friction balls at the upper and lower ends of the sleeve are on the outside and inside, respectively, of the sleeve. The alleged infringement consists in the steering head of a bicycle, wherein the friction balls are placed relatively to the sleeve in the same way as in the patent. The upper end of the device is represented by the following drawing:



The specification describes the device of this claim in the following words:

"My improvement in the steering post consists of the shoulder g^2 , above the crotch h^2 , cap i^2 , at the upper end, secured by check-nut j^2 , sleeve k^2 , with head l^2 , and shoulder m^2 , and the balls n^2 , the arrangement being such that the cap i^2 , and check-nut j^2 may be set down readily from time to time whenever the parts may wear slack; and in practice the cap i^2 will fit over head l^2 , and the flange of shoulder m^2 will fit over the shoulder of the crotch so tightly as to exclude the dust, and thus insure the most lasting and easy-working contrivance."

The function of this device is thus described in his direct examination by the expert witness called by the complainants:

"Cross-Int. 17. What, in your opinion, are all of the advantages derived from the construction specified in claim 5 in the patent in suit? A. Ease and steadiness of steering, perfect adjustability as to tightness, and the shedding out of the bearing of all flying or floating particles of dirt or grit, which come into contact with the balls. It is only the last-named of these advantages which belongs exclusively to the construction specified in the patent, as distinguished from the nearest approach to that construction in the prior art."

When called in rebuttal he makes the following additional observations:

"Fig. 11 of the Bown and Derry patent differs from the steering head of the patent in suit in the following respects: Instead of having the bearing surfaces of the sleeve so made that the lower bearing surface is outside of the lower row of balls and the upper bearing surface is inside of the upper row of balls, it has both bearing surfaces of the sleeve outside of the balls; instead of having the upper row of balls pressed against the outside of the

sleeve by the nut member of the bearing surfaces, the balls of the upper row are pressed outward against the upper end of the sleeve by the combined action of the nut and the stem. Two important differences in operation and result follow from these differences in structure. The first, to which I have already referred, is that the steering head of Bown and Derry is a dirt-catching steering head, while that of the patent in suit is a dirt-shedding steering head. The second is that the steering head of Bown and Derry will work unsteadily under the prying strains to which a steering head is always subjected when in use, while the steering head of the patent in suit will work steadily under these prying strains. The explanation of this last statement is as follows: It will be plain, from a study of Fig. 11 of the Bown and Derry patent, that any prying strain upon the stem with respect to the sleeve will nip one of the balls at the bottom of the sleeve and one of the balls at the top of the sleeve, and that the bottom ball which is nipped will be on the opposite side of the stem from the top ball which is nipped. If now the stem be turned in the sleeve, the axis about which it will begin to turn will be a straight line through the stem from a point near the top on one side of the stem to a point line joining the two balls which are nipped, and consequently passing near the bottom on the opposite side of the stem. The turning will continue to be about this axis until the swinging movement due to the turning about a diagonal axis is arrested by the other balls in the bearing, and then the turning, if continued, will be about an axis approximating closely to the geometric axis of the sleeve. This beginning of the turning about an initial axis whose direction differs greatly from that of the final axis of turning, results in an unsteadiness of steering; because it is essential to the stability of a bicycle that the steering axis shall have just the right direction with reference to the wheels. It will be evident from a study of the steering head of the patent in suit, that when a prying strain nips a ball in the lower row and a ball in the upper row these two balls will be on the same side of the stem, and that the line joining them will not pass through the spindle, and may be made precisely parallel to the axis of the spindle by suitably proportioning the parts of the structure. Thus the unsteadiness due to a transfer of the turning from one to the other of two axes, having different directions, is entirely obviated by making the steering head according to the patent in suit instead of making it according to the Bown and Derry patent."

It is, however, clear, from the evidence, that the friction balls resist thrusts in all directions, in the prior Bown and Derry patent, to which reference is above made, as well as in the patented device and the alleged infringing device; and, this being so, I cannot see that there is any difference in ease of turning which can result from the structure of the patent. The only new function which I can see is served by the structure of the patent is the dirt-shedding function of the surfaces on which the friction balls bear. The patent, indeed, contemplates, in terms, that dust shall be "excluded" from the bearing surface at the upper end of the steering post. But I think this may fairly be taken to mean "nearly excluded," since it can hardly be supposed that the flange of the shoulder shall fit so closely as absolutely to exclude all dust. It may be taken, as it seems to me, that the inclined bearing surface will, as the complainants say, tend to shed such dust as may enter under the flange of the shoulder. But this function clearly depends on the structure of that surface as a straight inclined surface. The bearing surface in the respondent's device, although inclined in the sense that the inner edge is higher than the outer, is still so constructed that it will not shed dust. It will rather tend to retain dust on the downwardly curved part of the surface which lies between the two edges. I must, therefore, conclude that the respondent does not infringe, and that the bill must be dismissed.

CARTER MACH. CO. v. HANES et al.

(Circuit Court, W. D. North Carolina. October 31, 1895.)

1. PATENTS—LIMITATION OF CLAIMS—COMBINATIONS.

The use of the words "substantially as described" in a combination claim is an express limitation, restricting the patentee to the peculiar and specific combination of elements and parts of which his machine is composed.

2. SAME—MECHANICAL EQUIVALENTS.

The inventor of a machine, consisting of a new combination of old and well-known elements, which is shown by experiment to be impracticable and valueless for the purpose intended, cannot, after obtaining a patent therefor, abandon his specifically described novel invention, and substitute, as a mechanical equivalent therefor, the methods of old machines which he claimed to have improved upon, and then sue as infringers persons employing the old device in the old way.

3. SAME—IMPROVEMENTS—COMBINATIONS.

Patents for mere improvements, consisting in combinations of old elements and ingredients, should be limited, by a strict construction of their claims and specifications, so as to leave the unappropriated field of the art open to other improvers.

4. SAME—MECHANICAL EQUIVALENTS.

In general, a mechanical equivalent which may be properly substituted for an omitted mechanical element, device, or agency in a patented machine is one that performs the same function by applying the same force to the same object, through the same mode and means of application. As applied to combination patents, it is special in its significance, and materially narrower in its range than when applied to an invention consisting of a new device or an entirely new machine.

5. SAME—TOBACCO FLAVORING MACHINE.

The King patent, No. 494,960, for an improvement in tobacco flavoring machines, is void for want of useful novelty, and as accomplishing no new and valuable result, and no old result in a better and cheaper manner.

This was a bill by the Carter Machine Company against P. H. Hanes & Co., for infringement of a patent relating to tobacco flavoring machines.

Peatross & Harris and W. D. Baldwin, for complainant.

Glenn & Manly, W. W. Fuller, and Watson & Buxton, for defendants.

DICK, District Judge. The complainant is conceded to be the duly constituted assignee of United States patent 494,960, issued to John M. King, on the 4th day of April, 1893. This suit in equity has been brought by complainant against defendants to obtain an injunction, and recover damages for an alleged infringement of the said patent now owned and controlled by complainant. On the 29th day of May, 1891, the assignor, John M. King, filed an application for this patent for the improvement in tobacco flavoring machines as described in claim and specification attached to his application. The claim and specification set forth a detailed and particular description of the machine, accompanied by drawings showing from three points of view the particular construction of his machine, and its means and manner of operation. The applicant thus gave notice to the patent office and the intelligent public interested in mechanism that he